



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,766	12/09/2003	Reid Edmund Tatge	TI-35556	4307
23494 7590 05/26/2010 TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265				
EXAMINER				
WANG, BEN C				
ART UNIT		PAPER NUMBER		
2192				
NOTIFICATION DATE		DELIVERY MODE		
05/26/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@ti.com

Office Action Summary

Application No.

10/731,766

Applicant(s)

TATGE ET AL.

Examiner

BEN C. WANG

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on February 12, 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to the amendment filed on 2/12/2010.
2. Claims 1-18 and 20 have been canceled.
3. Claim 19 has been amended.
4. Claim 19 is pending.

Applicant's arguments with respect to claim have been fully considered but are moot in view of the new grounds of rejection – see *Adolphson et al.* - art made of record, as applied hereto.

Claim Rejections – 35 USC § 103(a)

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (Pub. No. US 2004/0064809 A1) (hereinafter 'Liu') in view of Adolphson et al. (Pub. No. US 2005/0010912 A1) (hereinafter 'Adolphson' - art made of record)

7. **As to claim 19** (Currently Amended), Liu discloses a method of code generation comprising the steps of:

- compiling a source code thereby generating an object file comprising object code and intermediate code (e.g., Fig. 1, elements 104 – Source Program; 112 – Source File; 106 – Compiler 106; [0024] - ... The compiler 106 is configured to translate source files 112 of the source program 104 into intermediate object and object files ... ; Fig. 3, block 302 – Compiler Translates Source File(s) into Intermediate Objects);
- optimizing the intermediate code into optimized intermediate code (e.g., Fig. 2, element 102 – Translator/Optimizer; Fig. 3, block 308 – Linker returns Intermediate Objects to Compiler; Fig. 4C, block 432 – Compiler Performs any Optimizations available in view of Information provided by the Linker; Fig. 5, block 506 – Compiling the Program with the Compiler in view of the Gathered Information so as to Optimize the Program; [0008] – [0014]) ; and

linking the object file including

- receiving the object file including object code and intermediate code (e.g., Fig. 3, blocks 312 – Compiler Generates Real Objects; 314 – Real Objects linked together by Linker; Fig. 4B, block 416 – Real and Intermediate Objects provide to Linker); and
- producing executable code from the object file including object code and optimized intermediate code (e.g., [0049] - ... the real

objects are linked together by the linker 108 to produce an executable program as indicated in block 314)

Further, Liu discloses translating source objects of the program into intermediate objects using a compiler, providing the intermediate objects to a link, analyzing portions of the program about which the compiler has no knowledge using the linker, updating a global symbol table with information contained in the linker global symbol table to the compiler, and translating the intermediate objects into real objects with the compiler in reference to the information contained in the linker global symbol table so as to optimize the program (e.g., [0010]) but does not explicitly disclose other limitations stated below.

However, in an analogous art of *System and Method for Improved Register Allocation in an Optimizing Compiler*, Adolphson discloses:

- providing intermediate code to be optimized said step of providing intermediate code to be optimized provides only portions of the intermediate code (e.g., Fig. 2, selective option 206, intermediate representation module 204; [0040] - ... Selective optimization data 206 is used by back-end compiler 215 to determine whether and to what extent to optimize different component portions of intermediate representation module 204 [used only portions of the intermediate code]; – emphasis added)
- receiving optimized intermediate code (e.g., [0034] - ... source code written in different forms may be compiled by different front-

end compilers to a common intermediate form for further compilation by a common back-end compiler ... the common intermediate form being then compiled by different back-end compilers associated with different respective hardware ... back-end compiler 215 has the capability to perform certain optimizations on all, none, or selective portions ... - emphasis added)

Therefore, it would have been obvious to one of ordinary skill in the pertinent art, at the time the invention was made to combine the teachings of Adolphson into the Liu's system to further provide other limitations stated above in the Liu system.

The motivation is that it would further enhance the Liu's system by taking, advancing and/or incorporating the Adolphson's system which offers significant advantages that a compiler has the capability to selectively compile individual portions of a compilable code module for optimum execution performance or for serviceability as once suggested by Adolphson (e.g., Abstract).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben C. Wang whose telephone number is 571-270-1240. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax

Art Unit: 2192

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ben C Wang/

Examiner, Art Unit 2192

/CHAMELI C. DAS/

Primary Examiner, Art Unit 2192

Dated: 5/20/10